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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,986	03/01/2002	Gerard O'Driscoll	TD-166	6316
29106	7590	12/27/2005	EXAMINER	
GROOVER & HOLMES BOX 802889 DALLAS, TX 75380-2889			CASCHERA, ANTONIO A	
			ART UNIT	PAPER NUMBER
			2676	

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/086,986

Applicant(s)

O'DRISCOLL, GERARD

Examiner

Antonio A. Caschera

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>07/18/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-3 and 5-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Nelson et al. (U.S. Patent 6,947,057 B2).

In reference to claims 1, 5, 13, 19, 22 and 28, Nelson et al. discloses a computer graphics system and method that utilizes a super-sampled sample buffer and one or more programmable sample-to-pixel units for refreshing a display, while rendering lines (see column 4, lines 7-10 and title of Nelson et al.). Nelson et al. specifically discloses rendering lines by receiving coordinates of two points defining the line ends (see column 28, lines 8-12). Nelson et al. discloses computing the horizontal and vertical displacement between the line segment endpoints and then comparing the two displacement values to determine the classification of the line (see column 28, lines 24-39). Specifically, Nelson et al. discloses that if the absolute value of the horizontal displacement is smaller than the absolute value of the vertical displacement, the line segment is said to be Y-Major, while if the absolute value of the horizontal displacement is greater than or equal to the absolute value of the vertical displacement, the line segment is said to be X-Major (see column 28, lines 31-39). Nelson et al. also discloses computing the parameters

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m and b for a line equation corresponding to the line segments from the received line end coordinates (see column 29, lines 40-54). Nelson et al. discloses determining a bounding box around the line segment and then determining a set of candidate bins in a virtual screen space which intersect the bounding box (see columns 28-29, lines 64-16). Nelson et al. also discloses performing subpixel sampling by computing a set of sample positions, the sample positions, in one embodiment are perturbed by x and y values from a regular square grid (see columns 20-21, lines 59-3, column 21, lines 28-50 and Figures 9 and 10). Note, the Office interprets that the number and positioning of each perturbed sample is based upon the classification of the line, X or Y-Major, since the number and positioning of the samples is directly based upon the bounding box made around the line segment, this bounding box, specifically its upper and lower edges, further computed by the m and b components of the line segment (see columns 28-29, lines 64-12). In reference to claims 5, 19 and 28, the Office interprets Nelson et al. to inherently calculate in which direction the line is most nearly parallel to when Nelson et al. discloses computing the slope (m component of the line segment equation) of the line. Also, since the samples used are found within the bounding box which is oriented in the same direction as the line segment, the Office interprets that these samples inherently provide maximal resolution approximately normal to the orientation of the line.

In reference to claims 2, 14 and 23, Nelson et al. discloses all of the claim limitations as applied to claims 1, 13 and 22 respectively above. Nelson et al. specifically discloses rendering lines by receiving coordinates of two points defining the line ends (see column 28, lines 8-12). Nelson et al. discloses computing the horizontal and vertical displacement between the line segment endpoints and then comparing the two displacement values to determine the

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classification of the line (see column 28, lines 24-39). Specifically, Nelson et al. discloses that if the absolute value of the horizontal displacement is smaller than the absolute value of the vertical displacement, the line segment is said to be Y-Major, while if the absolute value of the horizontal displacement is greater than or equal to the absolute value of the vertical displacement, the line segment is said to be X-Major (see column 28, lines 31-39).

In reference to claims 3, 16 and 25, Nelson et al. discloses all of the claim limitations as applied to claims 1, 13 and 22 respectively above. The Office interprets that the determination of X or Y-Major line corresponds one-to-one to the number and positioning of the samples found within the bounding box since the bounding box has a correspondence with the line segment in Nelson et al.

In reference to claims 6, 20 and 29, Nelson et al. discloses all of the claim limitations as applied to claims 5, 19 and 28 respectively above. Nelson et al. specifically discloses rendering lines by receiving coordinates of two points defining the line ends (see column 28, lines 8-12). Nelson et al. discloses computing the horizontal and vertical displacement between the line segment endpoints and then comparing the two displacement values to determine the classification of the line (see column 28, lines 24-39). Specifically, Nelson et al. discloses that if the absolute value of the horizontal displacement is smaller than the absolute value of the vertical displacement, the line segment is said to be Y-Major, while if the absolute value of the horizontal displacement is greater than or equal to the absolute value of the vertical displacement, the line segment is said to be X-Major (see column 28, lines 31-39). Note, the direction of two of Applicant's claims is interpreted as X and Y directions corresponding to X and Y-Major orientations.

In reference to claims 7 and 8, Nelson et al. discloses all of the claim limitations as applied to claims 1 and 5 respectively above. Nelson et al. discloses the graphics system comprising a graphics board further comprising a graphics processing unit, super-sampled sample buffer and one or more sample-to-pixel calculation units (see column 9, lines 30-41).

In reference to claims 9, 15 and 24, Nelson et al. discloses all of the claim limitations as applied to claims 2, 14 and 23 respectively above. Nelson et al. discloses computing the horizontal and vertical displacement between the line segment endpoints and then comparing the two displacement values to determine the classification of the line (see column 28, lines 24-39). Specifically, Nelson et al. discloses that if the absolute value of the horizontal displacement is smaller than the absolute value of the vertical displacement, the line segment is said to be Y-Major, while if the absolute value of the horizontal displacement is greater than or equal to the absolute value of the vertical displacement, the line segment is said to be X-Major (see column 28, lines 31-39).

In reference to claims 10, 17 and 26, Nelson et al. discloses all of the claim limitations as applied to claims 1, 13 and 22 respectively above. Nelson et al. discloses that each bin candidate, used in sampling, comprises of nine samples (see column 21, lines 44-50).

In reference to claims 11, 12, 18, 21, 27 and 30, Nelson et al. discloses all of the claim limitations as applied to claims 1, 5, 13, 19, 22 and 28 respectively above. Nelson et al. discloses that each bin candidate, used in sampling, comprises of nine samples and in another example four samples (see column 21, lines 44-50).

Response to Arguments

2. Applicant's arguments, see pages 8-18 of Applicant's Remarks, filed 10/14/05, with respect to the rejection(s) of claim(s) claims 1-5 and 5-30 under 35 U.S.C. 102(e) & 103(a) using Millet et al. have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Nelson et al. (U.S. Patent 6,947,057 B2).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Antonio Caschera whose telephone number is (571) 272-7781. The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:30 AM and 5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached at (571) 272-7778.

Any response to this action should be mailed to:

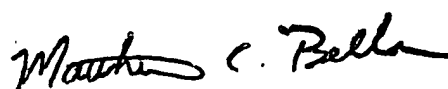
Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

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12/20/05